

TIKHOMIROV, V.V.; VOSKRESENSKAYA, N.A.

Commemorative dates for October-December, 1962. Sov.geol.
5 no.11:125-130 N '62. (MIFA 15:12)

1. Geologicheskii institut AN SSSR.
(Anniversaries)

TIKHOMIROV, V.V.; VOSKRESENSKAYA, N.A.

Commemorative dates in July-September, 1963. Sov. geol. 6
no.7:139-153 J1 '63. (MIRA 16:8)

1. Geologicheskii institut AN SSSR.

TIKHOMIROV, V.V.; VOSKRESENSKAYA, N.A.

Memorable dates for October, 1963. Sov. geol. 6 no.10:
129-133 0 '63. (MIRA 17:1)

1. Geologicheskii institut AN SSSR.

TIKHOMIROV, V.V.; VOSKRESENSKAYA, N.A.

Commemorative dates in January-March, 1962. Sov.geol.
5 no.1:170-175 Ja '62. (MIRA 15:2)

1. Geologicheskii institut AN SSSR.
(Anniversaries)

TIKHOMIROV, V.V.; VOSKRESENSKAYA, N.A.

Commemorative data in April-June, 1962. Sov.geol. 5 no.4:130-
137 Ap '62. MIRA 15:4)

1. Geologicheskii institut AN SSSR.
(Anniversaries)

TIKHOMIROV, V.V.; VOŠKRESENSKAYA, N.A.

Memorable dates for April to June 1961. Sov. geol. 4 no.4:140-145
Ap '61. (MIRA 14:5)

1. Geologicheskii Institut AN SSSR.
(Anniversaries)

TIKHOMIROV, V.V.; VOSKRESENSKAYA, N.A.

Commemorative data in October-December, 1961. Review No.32.
Sov.geol. 4 no.11:165-170 N '61. (MIRA 14:11)

1. Geologicheskii institut AN SSSR.
(Anniversaries)

TIKHOMIROV, V.V.; ~~VOSKRESENSKAYA, N.A.~~

Commemorative dates in April-June, 1963. Sov. geol. 6 no.5:
139-145 My '63. (MIRA 1616)

1. Geologicheskii institut AN SSSR.
(Anniversaries)

NALIVKIN, D.V., glav. red.; BELYAYEVSKIY, N.A., zam. glav. red.;
TIKHOMIROV, V.V., zam. glav. red.; ASSOVSIIY, A.N., red.;
MEL'NIKOV, O.D., red.; PEYVE, A.V., red.; YAKSHIN, A.L.,
red.; VOSKRESENSKAYA, N.A., red.; KALYUZHNIY, V.I.A., otv. red.
vyp.; NATOCHIIY, P.A., red. vyp.; MEL'NIK, A.F., red. izd-va;
LISOVETS, A.M., tekhn. red.

[Study of the geology of the U.S.S.R.] Geologicheskaya izu-
chennost' SSSR. Kiev, Izd-vo AN Ukr.SSR. Vol.31. [Ukrainian
S.S.R. (western provinces); period 1951-1955] Ukrainskaya SSR
(zapadnye oblasti); period 1951-1955. No.1. [Published studies
and reviews] Opublikovannye raboty i obzornye glavy. 1963. 173 p.
Vol.32. [Central and eastern provinces of the Ukrainian SSR;
period 1951-1955] Ukrainskaya SSR (tsentral'nye i vostochnye
oblasti period 1951-1955. No.1. [Published studies] Opublikovan-
nye raboty. 1963. 326 p. (MIRA 16:10)
(Ukraine—Geology)

TIKHOMIROV, V.V.; VOSKRESENSKAYA, N.A.

Branch conferences of editorial boards on the volumes of "Current state of the study of geology of the U.S.S.R. (the Caucasus and southwestern part of the European U.S.S.R.). Sov. geol. 3 no.3:150-151 Mr '60. (MIRA 13:11)

1. Geologicheskii institut AN SSSR.
(Geology)

PLAKSIN, I.H.; ASTAP'YEVA, A.V.; VOSKRESENSKAYA, M.M.; SHABARIN, S.K.

Chlorination as a method to extract platinum and palladium from
oxidized copper-nickel ores. Izv. vys. ucheb. zav.; tsvet. met.
3 no. 6:95-103 '60. (MIRA 14:1)

1. Krasnoyarskiy institut tsvetnykh metallov. Kafedra metallurgii
blagorodnykh metallov.
(Chlorination) (Nonferrous metals--Metallurgy)

TIKHOMIROV, V.V.; VOSKRESENSKAYA, N.A.

Commemorative dates in January-March, 1964. Sov. geol.
7 no.4:133-139 Ap'64. (MIRA 17:5)

1. Geologicheskii institut AN SSSR.

TIKHOMIROV, V.V., VOSKRESENSKAYA, N.A.

Memorable dates for April-September, 1960. Review no.27. Sov.
geol. 3 no.7:124-128 J1 '60. (MIRA 13:8)

1. Geologicheskii institut AN SSSR.
(Anniversaries)

TIKHOMIROV, V.V.; VOSKRESENSKAYA, N.A.

Memorable dates for January-March 1960. Survey no. 26. Sov. geol.
3 no.4:136-139 Ap '60. (MIRA 13:11)

1. Geologicheskii institut AN SSSR.
(Anniversaries)

TIKHOMIROV, V.V.; VOSKRESENSKAYA, N.A.

Memorable dates for July-September, 1958. Sov. geol. 4 no.8:
138-145 Ag '61. (MIRA 16:7)

1. Geologicheskii institut AN SSSR.
(Anniversaries)

TIKHOMIROV, V.V.; VOSKRESENSKAYA, N.A.

Commemorative dates in April-June 1964. Sov. geol. 7 no.9:137-142
S '64. (MIRA 17:10)

1. Geologicheskii institut AN SSSR.

TIKHOMIROV, V.V.; VOSKRESENSKAYA, N.A.

Commemorative dates in July-September, 1964. Sov. geol. 7
no.11:135-140 N '64. (MIRA 18:2)

TIKHOMIROV, V.V.; VOSKRESENSKAYA, N.A.

Commemorative dates in January-March 1965. Sov. geol. 8 no.3:
138-148 '65. (MIRA 18:5)

1. Geologicheskii institut AN SSSR.

BC

A1

System sodium chloride-magnesium sulphate-water at 35°. N. K. ZEMERITSKYA (J. Appl. Chem., Russia, 1961, 8, 321-330). The following systems, each with water, were also treated at 35°:

sodium chloride-magnesium chloride; magnesium chloride-magnesium sulphate; magnesium salt-sodium sulphate; magnesium sulphate-magnesium chloride-sodium sulphate-sodium chloride.

CHEMICAL ABSTRACTS.

Tenimetric analysis of the systems: $\text{MnSO}_4 \cdot \text{H}_2\text{O}$ and alkaline aluminosilicate- H_2O . N. K. VORONSKAYA. *J. Gen. Chem.* (U. S. S. R.) 2, 630-6 (1932) — By use of the tenimetric method of analysis, a study was made of the following systems, at 25°: (1) $\text{MnSO}_4 \cdot \text{H}_2\text{O}$, (2) $\text{Na}_3\text{Al}(\text{C}_2\text{O}_4)_3 \cdot \text{H}_2\text{O}$, (3) $\text{K}_3\text{Al}(\text{C}_2\text{O}_4)_3 \cdot \text{H}_2\text{O}$ and (4) $(\text{NH}_4)_3\text{Al}(\text{C}_2\text{O}_4)_3 \cdot \text{H}_2\text{O}$. The following hydrates, with the no. of H_2O moles, and their vapor pressures at 25° were found: in (1) 5 and 1 H_2O hydrates, having vapor pressures 18.5 and <0.1 mm., no solid solns.; in (2) 4.5 and 2.5 H_2O hydrates, pressures, 0.6 and 0.4 mm. (continuous loss of the last mol. of H_2O is possible); in (3) 3, 2, and 0.5 H_2O hydrates, pressures 5.8, 2.5 and <0.1 mm., no solid solns.; in (4) a continuous series of solid solns. between the monohydrate and H_2O , and between the monohydrate and the anhyd. salt. Systems 2, 3 and 4 are characterized by the fact that they reach equilibrium slowly, and, therefore, the results should be looked upon as merely showing general trends.

S. L. Malinovsky

Equilibria in the system $MgCl_2-NH_4Cl-H_2O$. N. K. Voskresenska. *J. Gen. Chem.* (U. S. S. R.) 4, 153-57 (1934); cf. Biltz and Marcus, *C. A.* 3, 3020; Erebrow, *C. A.* 28, 2165.—The equilibria of the system were studied at temps. from 115° to the eutectic (−34.6°) partly by the isothermal and partly by the polythermal method (by the sepn. of the 1st crystals detd. visually). Hydrate Acids of $MgCl_2$, NH_4Cl , $NH_4Cl \cdot MgCl_2 \cdot 6H_2O$ and ice were observed. No solid soln. were found. The soln. of NH_4Cl in the satd. soln. of $MgCl_2$ is very poor (fractions of 1%), increasing somewhat near the transition point (2.8%). $NH_4Cl \cdot MgCl_2 \cdot 6H_2O$ is formed in the system above −32°, and up to 50° dissolves incongruently. The visual study of the aq. system (by the sepn. of the 1st crystal) gave in most cases clear results checking well with the soln. Tensimetric study of ammonium carnallite. *Ibid.* 173-5; cf. Bergman, *J. Russ. Phys.-Chem. Soc.* 37, 107(1925); Palkin, *C. A.* 24, 4603; Rostovskii, *C. A.* 25, 3904.—A comparison of the hydrates of $MgCl_2$ and $MgCl_2 \cdot NH_4Cl$ showed that NH_4Cl in the mol. decreases the no. of hydrates and weakens the bond of H_2O and the salt: while $MgCl_2 \cdot 6H_2O$ can be dehydrated over 90% H_2SO_4 , and P_2O_5 only to $MgCl_2 \cdot 4H_2O$, $MgCl_2 \cdot NH_4Cl \cdot 6H_2O$ loses 4 mol. of H_2O over 40% H_2SO_4 , and is further dehydrated over P_2O_5 . The disocn. tension of the system is 0.5 mm. with a loss of 4 mol. of H_2O . Diagrams are given of the vapor tension in the process of dehydration of the double salt, which dissolves incongruently. Chas. Blanc.

BC

a-1

Calorimetry in binary liquid systems. (N. S. KURNAKOV and N. K. YAKOVLEVICH (Bull. Acad. Sci. U.S.S.R., 1959, (39-40)). The heat of mixing when plotted against mol. composition gives sharp max. at 50% for the systems C₂H₅-CNS with piperidine and NHTA. C₂H₅OCN behaves similarly with HCO₂Et and with P₂O₅ Et₂O the max. at 25%. SnCl₄ and SnBr₄ are both sharp. SnCl₄-Et₂O has a very flat max. SnBr₄ gives a sharp max. at 25%. SnBr₄ with HCO₂Et and also with EtOAc at 50%. With P₂O₅ Et₂O a very flat max. is found and a small heat effect observed with Et₂O. Et₂O-H₂O mixtures give a rounded max. at 50%. The results are compared with mol. vol. and viscosity changes in these systems.

D. C. J.

ASM-11.5 METALLURGICAL LITERATURE CLASSIFICATION

GROUPS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

PROCESSING AND PROPERTY INDEX	
<p>137 AND 138 COPIES</p> <p>139 AND 140 COPIES</p> <p>141 AND 142 COPIES</p> <p>143 AND 144 COPIES</p> <p>145 AND 146 COPIES</p> <p>147 AND 148 COPIES</p> <p>149 AND 150 COPIES</p> <p>151 AND 152 COPIES</p> <p>153 AND 154 COPIES</p> <p>155 AND 156 COPIES</p> <p>157 AND 158 COPIES</p> <p>159 AND 160 COPIES</p> <p>161 AND 162 COPIES</p> <p>163 AND 164 COPIES</p> <p>165 AND 166 COPIES</p> <p>167 AND 168 COPIES</p> <p>169 AND 170 COPIES</p> <p>171 AND 172 COPIES</p> <p>173 AND 174 COPIES</p> <p>175 AND 176 COPIES</p> <p>177 AND 178 COPIES</p> <p>179 AND 180 COPIES</p> <p>181 AND 182 COPIES</p> <p>183 AND 184 COPIES</p> <p>185 AND 186 COPIES</p> <p>187 AND 188 COPIES</p> <p>189 AND 190 COPIES</p> <p>191 AND 192 COPIES</p> <p>193 AND 194 COPIES</p> <p>195 AND 196 COPIES</p> <p>197 AND 198 COPIES</p> <p>199 AND 200 COPIES</p>	<p>2</p> <p>JOHN W. B. BROWN</p> <p>The calorimetric method of physical-chemical analysis. N. K. Vokharskaya, A. A. Arsenov, A. V. Semchenko, Ya. M. Velshov and K. S. Ponomarev. <i>Ispolki Khim.</i> 3, 1013-24 (1961); <i>Chem. Zvest.</i> 1917, II, 2003-4. Un- published work done in the thermochem. lab. of the Inst. for Inorg. Chem. is briefly reported. This includes measurements of the heat of mixing, viscosity, and mol. vols. of the systems mustard oil-secondary amines, SnCl_4- esters, SnBr_4-esters. The first system gives a rational diagram while the 2 other systems demonstrate beautiful fully the transition from singular systems to irrational systems. The heat of neutralization of 4 N solns. of KOH and HNO_3 in acid and alk. soln. was detd. As a result, a singular diagram is given of the pseudobinary system of the solns. KOH and HNO_3. The effect of various elec- trolytes on the heat of soln. of a different electrolyte in water was measured. From the data obtained it is con- cluded that the soln. represents a ternary complex in which the greater portion of the water is simultaneously subjected to the action or effect of both salts. The 8 salts studied can be divided into 2 classes. To the first belongs Na_2CO_3, KCl, KNO_3, and NaNO_3, and to the 2nd $\text{MnCl}_2 \cdot 4\text{H}_2\text{O}$ and $\text{MnCl}_2 \cdot 6\text{H}_2\text{O}$. In addn., Na_2SO_4 prob- ably belongs to the first group and KOH to the 2nd. In the soln. of electrolytes of the 2nd group in solns. of salts of the first group, a pos. heat effect is increased while a neg. heat effect is reduced. At 61 Above</p> <p>ASS-5LA METALLURGICAL LITERATURE CLASSIFICATION</p> <p>FROM SYNDICATE</p> <p>196000 196001 196002 196003 196004 196005 196006 196007 196008 196009 196010 196011 196012 196013 196014 196015 196016 196017 196018 196019 196020 196021 196022 196023 196024 196025 196026 196027 196028 196029 196030 196031 196032 196033 196034 196035 196036 196037 196038 196039 196040 196041 196042 196043 196044 196045 196046 196047 196048 196049 196050 196051 196052 196053 196054 196055 196056 196057 196058 196059 196060 196061 196062 196063 196064 196065 196066 196067 196068 196069 196070 196071 196072 196073 196074 196075 196076 196077 196078 196079 196080 196081 196082 196083 196084 196085 196086 196087 196088 196089 196090 196091 196092 196093 196094 196095 196096 196097 196098 196099 196100 196101 196102 196103 196104 196105 196106 196107 196108 196109 196110 196111 196112 196113 196114 196115 196116 196117 196118 196119 196120 196121 196122 196123 196124 196125 196126 196127 196128 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197273 197274 197275 197276 197277 197278 197279 197280 197281 197282 197283 197284 197285 197286 197287 197288 197289 197290 197291 197292 197293 197294 197295 197296 197297 197298 197299 197300 197301 197302 197303 197304 197305 197306 197307 197308 197309 197310 197311 197312 197313 197314 197315 197316 197317 197318 197319 197320 197321 197322 197323 197324 197325 197326 197327 197328 197329 197330 197331 197332 197333 197334 197335 197336 197337 197338 197339 197340 197341 197342 197343 197344 197345 197346 197347 197348 197349 197350 197351 197352 197353 197354 197355 197356 197357 197358 197359 197360 197361 197362 197363 197364 197365 197366 197367 197368 197369 197370 197371 197372 197373 197374 197375 197376 197377 197378 197379 197380 197381 197382 197383 197384 197385 197386 197387 197388 197389 197390 197391 197392 197393 197394 197395 197396 197397 197398 197399 197400 197401 197402 197403 197404 197405 197406 197407 197408 197409 197410 197411 197412 197413 197414 197415 197416 197417 197418 197419 197420 197421 197422 197423 197424 197425 197426 197427 197428 197429 197430 197431 197432 197433 197434 197435 197436 197437 197438 197439 197440 197441 197442 197443 197444 197445 197446 197447 197448 197449 197450 197451 197452 197453 197454 197455 197456 197457 197458 197459 197460 197461 197462 197463 197464 197465 197466 197467 197468 197469 197470 197471 197472 197473 197474 197475 197476 197477 197478 197479 197480 197481 197482 197483 197484 197485 197486 197487 197488 197489 197490 197491 197492 197493 197494 197495 197496 197497 197498 197499 197500 197501 197502 197503 197504 197505 197506 197507 197508 197509 197510 197511 197512 197513 197514 197515 197516 197517 197518 197519 197520 197521 197522 197523 197524 197525 197526 197527 197528 197529 197530 197531 197532 197533 197534 197535 197536 197537 197538 197539 197540 197541 197542 197543 197544 197545 197546 197547 197548 197549 197550 197551 197552 197553 197554 197555 197556 197557 197558 197559 197560 197561 197562 197563 197564 197565 1975</p>

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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PROCESSING AND PRESCRIPTIONS USED

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2

Equilibria in the system: water-lithium chloride-ammonium chloride. N. K. Yankovskaya and O. K. Yanat'eva. *Ann. sector anal. phys. chim. Inst. chim. p/n. (U. S. S. R.)* 9, 201-3(1936).—The tabular and graphic representation of the solubilities of LiCl and NH₄Cl in H₂O shows that these salts give no compds.

Chas. Blanc

ASH-51A METALLURGICAL LITERATURE CLASSIFICATION

GROUPS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

117 AND 118 C2081
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Processes and Properties Notes

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Anomalous solid solutions in the system ammonium chloride-manganese chloride-water. N. S. Kurnakov and N. K. Vinogradskaya. *Bull. Acad. Sci. U. R. S. S. and No. 4, Vysokomskaya. Ser. chim. 1937, 607-608 (in German).*

The 25° isotherm of the system $\text{NH}_4\text{Cl}(\text{II})$ - $\text{MnCl}_2 \cdot 4\text{H}_2\text{O}$ was investigated by the method of Scheinmachers. The solid phases were examd. by the x-ray, optical, crystallographic, x-ray and sp. gr. methods. These studies showed the existence of a double salt $2\text{NH}_4\text{Cl} \cdot \text{MnCl}_2 \cdot 24\text{H}_2\text{O}$ (III) and 4 groups of dispersed systems: (1) the α -group in which the dispersion medium consists of a solid soln. of II or $\text{MnCl}_2 \cdot 24\text{H}_2\text{O}$ (IV) in I and the dispersed phase consists of a solid soln. of I in I and the dispersed phase consists of I in III and the dispersed medium consists of a solid soln. of I in III; (2) the β -group in which the dispersed phase consists of a solid soln. of II or IV in I; (3) the δ -group in which the dispersion medium consists of III and the dispersed phase consists of IV or of $\text{MnCl}_2 \cdot 4\text{H}_2\text{O}$ (V) in I; (4) the γ -group in which the dispersion medium consists of V and the dispersed phase of I or III. All the dispersion media and dispersion phases possess definite cryst. forms.

S. I. Malinsky

ASAC-SLA METALLURGICAL LITERATURE CLASSIFICATION

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0134 040170

Interaction of stannic chloride and bromide with esters of dibasic acids and other organic compounds from physico-chemical analysis of the corresponding systems. N. S. Kurnakov and N. K. Yakovlevskaya. *Bull. Acad. Sci. U. R. S. S., Classe sci. math. nat., Ser. chim.* 1937, 707-721 (in German 721-2); cf. *C. A.* 31, 4587. — Esters of dibasic acids form compds. of $\text{SnX}_2 \cdot E$ type where X is the halogen and E is the ester mol. Esters of monobasic acids form compds. of $\text{SnX}_2 \cdot 2E$ type. At the same temp. SnCl_4 is more reactive than SnBr_4 . The characteristics of Sn halogen deriva. of esters are little influenced by differences in alk. radicals. Esters of carbonic acid are exceptions in this respect. M. ps. and viscosities of the following systems were investigated: $\text{SnCl}_4 \cdot (\text{CO}_2\text{Me})_2$, $\text{SnCl}_4 \cdot (\text{CO}_2\text{Et})_2$, $\text{SnCl}_4 \cdot \text{CH}_3(\text{CO}_2\text{Et})$, $\text{SnCl}_4 \cdot \text{CH}_3\text{CO}_2\text{Et}$, $\text{SnCl}_4 \cdot \text{CO}(\text{OR})_2$, $\text{SnCl}_4 \cdot \text{B}(\text{OMe})_3$, $\text{SnCl}_4 \cdot \text{B}(\text{OEt})_3$, $\text{SnBr}_4 \cdot (\text{CO}_2\text{Me})_2$, $\text{SnBr}_4 \cdot (\text{CH}_3\text{CO}_2\text{Me})_2$, $\text{SnBr}_4 \cdot \text{CO}(\text{OMe})_2$, $\text{SnBr}_4 \cdot \text{CO}(\text{OEt})_2$, $\text{SnBr}_4 \cdot \text{B}(\text{OMe})_3$, $\text{SnBr}_4 \cdot \text{B}(\text{OEt})_3$, $\text{SnBr}_4 \cdot \text{EtOH}$, $\text{SnBr}_4 \cdot \text{PhOH}$ and $\text{SnBr}_4 \cdot \text{Et}_2\text{S}$. V. A. K. 1-Alkyl-5,5-ethylisobutylbarbituric acids. Johannes S. Buck, Axel M. Wiest, Walter R. Ide and Edwin J. deBeer.

J. Am. Chem. Soc. 60, 461-2 (1938). — Amines were converted into the acids by means of nitrosurea in KIO_4 , the following are new: *octyl*, m. 102.5°; *nonyl*, m. 108°; *decyl*, m. 113°; *undecyl*, m. 107°; *tetradecyl*, m. 114.5°; *hexadecyl*, m. 108.5°; *octadecyl*, m. 111.5°; *docosyl*, m. 115°. The following 1-alkyl-5,5-ethylisobutylbarbituric acids were prepd. in the usual way: *Am*, m. 40°; *heptyl*, m. 55-6°; *heptyl*, m. 52-3°; *octyl*, m. 108-200°; *nonyl*, m. 101-3°; *decyl*, m. 215°; *undecyl*, m. 43°; *tetradecyl*, m. 54°; *hexadecyl*, m. 60°; *octadecyl*, m. 66°; *docosyl*, m. 69°. The results show that the size of the alkyl group

on the substituted urea makes little difference in the case of the condensation; the solubilities of the acids are such as to render them unsatisfactory for pharmacol. work, the series of compds. offers no promise as hypnotics; the hypaotic effect disappears at about the nonyl compd. (mol. wt, 338).

C. J. West

Viscometry of double systems containing bromine or water and organic substances. N. S. Kurnakov, N. K.

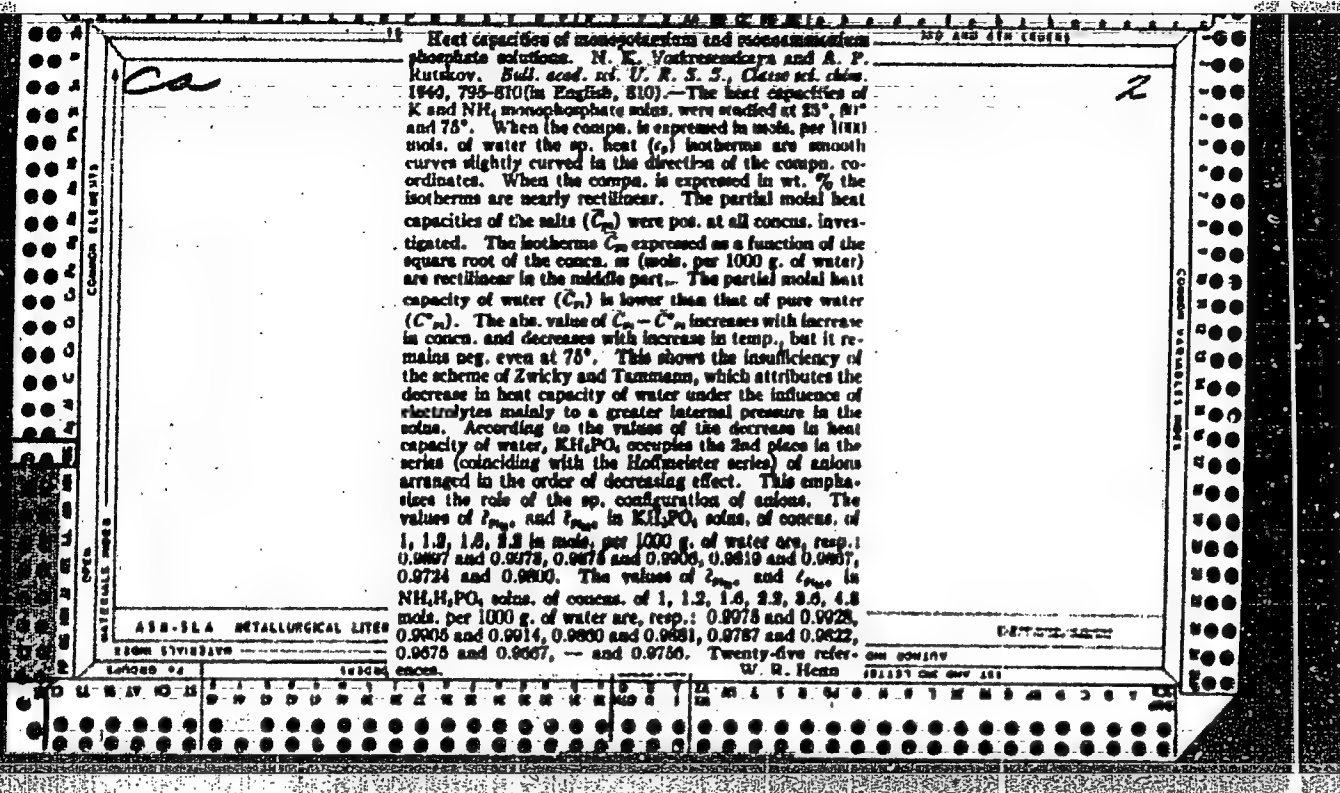
Yoshtenskaya, M. Gol'man and M. Shuvaylov. *Bull. Acad. Sci. U. R. S. S., Classe sci. math. nat., Ser. chim.* 1936, 379-90. (in English, 390).—Expts. were made in which weighed amts. of the components were introduced into a branch of an H-tube cooled with snow and were then permitted slowly to mix with Br or H₂O in another branch of the tube. Sp. gr. and viscosity were investigated for the systems: (1) Br-amylenes at 25°, (2) Br-(CHBr)₂ at 25°, (3) Br-PbClCH at 25°, (4) Br-(CH₂)₂ at 25°, (5) Br-BrOC(CH₃)Br at 25°, (6) Br-MeOC(CH₃)₂ at 25 and 50°, (7) Br-(PbCl₂)₂ at 25 and 50°, (8) H₂O-AcCl at 0°, (9) H₂O-valerolactone at 25 and 50°. For all systems sp. gr. curves were constructed and for the systems studied at 2 different temps., the temp. coeffs. of viscosity were calcd. The diagrams constructed indicate formation of chem. compds. in all systems with the exception of the last in which only a slight chem. interaction was observed. Formation of compds. (1:1) in the first 2 systems, a tetrabromide (1:2) and a dibromide (1:1) in the third system and tribromides in the systems 4, 5, 6 and 7 were detected by a study of the viscosity curves. In the systems in which H₂O was present a chem. interaction is shown by the contraction of the vol., and the viscosity isotherms at the temps. indicated exhibit maxima for 70 mol. % H₂O.

J. O. Tolpin

A 30-564 METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSING AND REPORTING NOTES																			
<p><i>Internal friction and feasibility of binary systems containing antimony trihalides and anilins or its derivatives. N. B. Kurnakov, N. K. Vostrenskaya and G. I. Garovich. Bull. Acad. Sci. U. R. S. S., Class. sci. math. nat., Ser. chim. 1938, 391-400 (in English, 400-1).—A study of the viscosity and sp. gr. of systems of SbBr₃ with PhNH₂, p-NO₂C₆H₄NH₂, and PhNHMe at 60-95° in which supercooling was applied indicates formation of 1:1 compds. in the first, second and fourth systems. The compds. formed in the first 3 systems melt without decomposition. A comparison of the results with those obtained by Menshutkin (Bull. St. Petersburg Polytechnical Inst., Nos. 13, 14, 15, 16(1913); C. A. 6, 3404) showed that substitution of Cl by Br in SbX₃ diminishes the residual valences; substitution in the C₆H₅ mol. of an H by NH₂ changes the compn. of the compd. with SbX₃; substitution in PhNH₂ of an H by Br in the para position diminishes the stability of the compd. with SbBr₃ only to an insignificant extent, while substitution of NO₂ prevents interaction. Substitution of an H in the NH₂ group by a CH₃ group leads to formation of a compd. of a higher degree of dissociation than that formed in the system C₆H₅NH₂-SbBr₃. J. O. Tolpin</i></p>																			
<p>ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																			
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1ST AND 2ND PERIODS		PERIODS AND PROPERTIES INDEX		3RD AND 4TH PERIODS	
<p>Heat of neutralization of potassium hydroxide and nitric acid in acid and alkaline solutions. N. K. Vostrenko, <i>Ann. repts. anal. phys. chim., Inst. chim. s. No. (U. S. S. R.)</i> 10, 230-73 (1938); cf. <i>Uspehi Khim.</i> 8, No. 7-8, 1013 (1939). The heats of mixing of 4 N HNO₃ and 4 N KOH with KNO₃ in H₂O (1:84.8) at 30° for various with irrational max. of 375 cal. for KNO₃-HNO₃ and 241 cal. for KNO₃-KOH. The heats of mixing of 4 N KOH and 4 N HNO₃ at 30° were calcd. from the exptl. results and the published data (cf. Richards and Rowe, <i>J. Am. Chem. Soc.</i> 20, 209 (1908)). The heat of mixing, referred to 1 mol. of the sum of electrolytes and considered as a function of the compn. of the binary system KOH-HNO₃, is represented by 2 lines slightly convex toward the abscissa axis and intersecting at the neutral point. The curves of dilution from additivity show singular min. (at the ratio of 1 HNO₃:1 KOH) and almost sym. from it according to the irrational max. The calcd. heat of reaction HNO₃ + KOH as a function of the ratios HNO₃/KNO₃ and KOH/KNO₃ reveals an increase with the greater deviation from the equiv. relations.</p> <p style="text-align: right;">Chas. Blanc</p>					
<p>ASS-ILA METALLURGICAL LITERATURE CLASSIFICATION</p>					
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Specific heat of the ternary system $\text{K}_2\text{SO}_4 - \text{NH}_4\text{PO}_4 - \text{H}_2\text{O}$. N. K. Yankovsky and A. P. Rutikov. Bull. Acad. Sci. U. R. S. S., Classe sci. chim. 1940, 896-904 (in English, 904).—The sp. heats of the system were studied at 25°, 50° and 75°. Calculations of the sp. heats by the formulae of d'Ann and Tolkert (C. A. 31, 1919) gave a maximum divergence of 0.11% from the exptl. data, the mean divergence being 0.04%. Boris L. Rodchenko.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

FROM SYMBOLISM

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Solubility isotherms of the system $K_2CO_3-KMnO_4-H_2O$.
V. M. Filippov and N. K. Vashchenko. *Ann. soviet
anal. phys.-chim., Inst. chim. fiz.* (U. S. S. R.) 13, 827-9
(1960).—The phase diagram of the system at 25° is given.
The soly. of K_2CO_3 is unaffected by $KMnO_4$; that of
 $KMnO_4$ falls with increasing K_2CO_3 concn. B. C. P. A.

2

ASH-SLC METALLURGICAL LITERATURE CLASSIFICATION

VORKRESENKAYA, N. K., RAVICH, M. I., and Ye. B SHTERNINA

"Viscometric Method of Physicochemical Analysis." Conf. of Viscosity of Liquids and Colloidal Solns. 1, 31-9 (1941). SO: Chemical Abstracts, Vol 40, No 11, 10 Jan 46

Typical cases of viscosity-compn. isotherms are reviewed, classified, and analyzed, mainly on the basis of the work of the school of N. S. Kurnakov and of Ravich, with special attention to the case of chem. interaction of the components. Formation of a stable compd. with a sharp max. of the viscosity isotherm is illustrated by the system aniline-mustard oil and systems consisting of derivs. of these compds.; viscosity curves show the max. much more markedly than melting diagrams or compn. isotherms of other properties. Such systems are termed rational. In the case of a partly dissociated compd. ("irrational systems") the max. is broadened and usually shifted to the side of the component with the higher viscosity; the shift of the position of the max. varies with the temp. When chem. interaction is only slight, the max. disappears and only a more or less pronounced convexity of the curve remains. Such systems often show max. of the temp. coeff. of the viscosity, situated much closer to the compn. corresponding to that of the compd. and much more marked than that of the viscosity curve itself, example: $\text{SnCl}_4\text{-Et}_2\text{CO}$. S-shaped viscosity curves show an inflection point

at the compn. corresponding to the compd., e.g., $C_6H_6-2SbCl_3$. In some instances the viscosity isotherm has a max. even though the melting diagram shows an eutectic min. More frequently, a max. is absent in the viscosity curve although the melting diagram shows the existence of a definite compd., e.g., H_2O-SO_3 ; this indicates decompn. of the compd. in the liquid phase at all temps. above melting. The viscosity diagram of the ternary system *m*-phenylenediamine (p)-benzoic acid (b)-salicylic acid (s) reveals the three binary comds. Bp, sp, and bs, of which sp has the highest viscosity; the compd. bs is now indicated on the melting diagram. Another example of the "Rational" ternary system is $K_2O-P_2O_5-H_2O$, the viscosity diagram of which shows a sharp singular crest $K_3PO_4-H_2O$. The ternary system aniline (a)-water (w)-acetic acid (c) illustrates a viscometric diagram of the irrational type; the binary max. corresponding to the compd. A2c is somewhat shifted towards c; on addn. of w, this max. becomes a ridge, shifted towards c from the secant, a 2c-w. A similar shape is shown by the viscosity space model of chloral (c)-ethyl alcohol (e)-benzene (b). In this system addn. of a third component has the same effect on viscosity as has an increase of temp.: plots of the viscosity against the relative concns. of c and e at equal concns. of b, show that the viscosity decreases with increasing content in b and the max. moves away ever more from the ordinate of the compd. towards e. Viscometric analysis of ternary systems is particularly fruitful when binary melting diagrams are not readily accessible.

Mbr., Inst. Gen. & Inorg. Chem., Dept. Chem. Sci., -1940-47-. Mbr., Lab. Phys. Chem., Archangel'sk Inst. Timber Ind., -1940-.

185

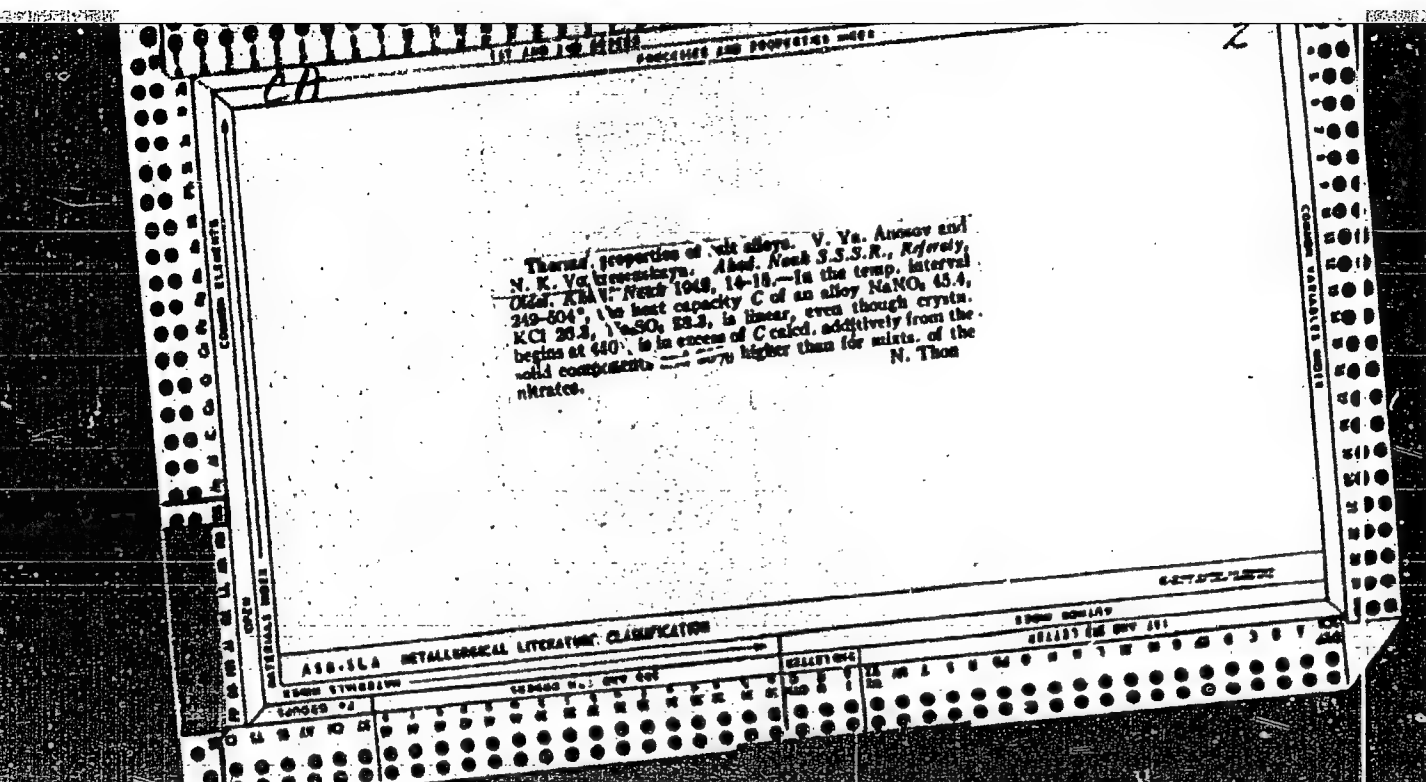
Solution heat polytherms for salts of low concentrations. N. K. Voshchinskaja and K. S. Ponomareva (*Compt. rend. Acad. Sci. U.R.S.S.*, 1948, 48, 188--190).--The heats of dissolution of KCl, NaCl, and KNO₃ at 25°, 50°, and 75°, and of MnCl₂·4H₂O and Na₂SO₄ at 25° and 50°, are measured. As the temp. is raised the process of dissolution becomes more exothermal, the polytherms being straight lines. The polytherms of MnCl₂·4H₂O and Na₂SO₄, the salts of highest ionic power, make the largest angle with the abscissa, showing that with them the effect of raising the temp. is greatest. The rest form the decreasing sequence KCl > NaCl > KNO₃.
N. R. R.

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

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and direction

Reflection of the quasi-crystalline structure of water in the specific
heats of aqueous salt solutions. N. K. Voskresenskaja and G. N.
Jankovskaja (*Bull. Acad. Sci. U.R.S.S., Cl. Sci. Chem.*, 1948, 3—13).
—The effect of different ions and salts on the sp. heat of H_2O
increases with the radius of the ion and depends on the configuration
of polyat. ions. The effect is greater with anions than with cations.
Measurements have been made in the systems $NaCl-H_2O$, Na_2SO_4-
 H_2O , $NaCl-Na_2SO_4-H_2O$ (80°), and $MgSO_4-K_2SO_4-H_2O$ (15°). The
relative effects found correspond with the effects of the same ions on
the H_2O II ↔ H_2O III equilibrium.
L. J. J.



CA

2

Heat capacity of eutectic fusions of the system formed by sodium, potassium, and calcium nitrates. V. Ya. Anosov and N. K. Voznesenskaya. *J. Applied Chem. (U.S.S.R.)* 18, 639-43 (1945) (English summary).—Using a calorimeter of a new type (to be described at a later date by the designer, S. M. Skuratov) A. and V. studied the heat capacities of fusions: $\text{NaNO}_3\text{-Ca(NO}_3)_2$, $\text{KNO}_3\text{-Ca(NO}_3)_2$, $\text{NaNO}_3\text{-KNO}_3\text{-Ca(NO}_3)_2$, substantially above their m.p.s., that of $\text{Ca(NO}_3)_2$ at 135° and 190° and that of NaNO_3 at 400-490°. The following results were obtained: NaNO_3 0.455 Cal./kg./° at 402.5° and 0.428 at 500°; $\text{Ca(NO}_3)_2$ 0.227 at 135° and 0.250 at 190°; 54.9% $\text{NaNO}_3\text{-45.1% Ca(NO}_3)_2$ 0.281 at 103°, 0.371 at 204°, 0.436 at 225°, 0.431 at 243°, 0.406 at 349°, and 0.387 at 401°; 54.2% $\text{KNO}_3\text{-45.8% Ca(NO}_3)_2$ 0.277 at 104°, 0.397 at 135°, 0.333 at 181°, 0.321 at 190.5°, 0.349 at 203°, 0.341 at 349.5°, 0.329 at 400.5°, 0.286 at 104°, 0.291 at 122°, 11.3% $\text{NaNO}_3\text{-44.9% KNO}_3\text{-43.8% Ca(NO}_3)_2$ 0.281 at 123.5°, 0.345 at 138°, 0.356 at 191.5°, 0.365 at 302°, and 0.373 at 400.5°. The heat-capacity curves obtained resemble those of glasses. (G. M. K.

ASB-36A METALLURGICAL LITERATURE CLASSIFICATION

FROM SYNOPTIC

TECHNO REP DIV 806

CLASSIFIED

EXEMPT FROM DIV 10

2

Alteration of the heats of solution by electrolysis having a common ion. N. K. Yonkresenskaya and R. S. Ponomareva. J. Phys. Chem. (U.S.S.R.) 20, 413-40(1946); cf. C.A. 39, 3103. The heats Q of solution of 3.3 g.-mol. of KNO_3 , NaNO_3 , KCl , Na_2SO_4 , and of 6.6 g.-mol. of KNO_3 , NaNO_3 , KCl , Na_2SO_4 , and of 6.6 g.-mol. of NaCl in 1000 g.-mol. of H_2O + x g.-mol. of a salt having a common ion with that to be dissolved, were detd. at 25°, 50°, and 75°. Q of KNO_3 at 25° is reduced from -8170 cal. at x = 0 to, e.g., -6333 at x = 59.40. For KNO_3 the alteration of Q increases from KOH to KCl , KBr , KI , NaNO_3 , KNO_3 , AgNO_3 , $\text{Cu}(\text{NO}_3)_2$ and $\text{Ba}(\text{NO}_3)_2$. The alteration of Q of NaNO_3 gives the similar series $\text{NaCl} < \text{NaBr} < \text{NaI} < \text{Ca}(\text{NO}_3)_2 < \text{Ba}(\text{NO}_3)_2$. For NaCl the series is $\text{MgCl}_2 < \text{LiCl} < \text{CaCl}_2 < \text{BaCl}_2$. For KCl the series is $\text{MgCl}_2 < \text{NaCl} < \text{KNO}_3$. These ionic series agree with that of the effects of ions on the structure of water. The decrease of the neg. heat of solution by salts is at 75° smaller than at 25°; e.g., Q of KNO_3 at 25° is -40.00 of KCl is -6331 (against -8170 in H_2O) at 75° and -6133 (against 6028 in H_2O) at 75°. The decrease of the endothermal effect is attributed to the change of the structure of H_2O by salt, and its increase (e.g., that of Q of KCl by LiCl at 75°) to a competition for water in the course of the hydration of the ions. The hydration effect is relatively more important the higher the temp.

J. I. Hinkman

ASB-35A METALLURGICAL LITERATURE CLASSIFICATION

BOARD ONE DIV 151

VOSKRESENSKAYA, N. K.

USSR/Chemistry - Systems, Ternary
Chemistry - Solubility

Jun. 1947

"The Thermodynamics of Solubility in Ternary
Aqueous Salt Systems," N. K. Voskresenskaya, G. N.
Yankovskaya, 9 pp

"Zhur Fiz Khim" Vol XXI, No 6, pp 749-57.

Contains graphs, tables of results and mathematical
formulae for determining the thermodynamics of
solubility of ternary aqueous salt systems.

14T112

VOSKRESENSKAYA, N.P.

Effect of cations of potassium, sodium, and calcium on the intensity of photosynthesis. Trudy Inst.fiziol.rast. 6 no.1:53-68 '48.

(MLRA 9:9)

1. Institut fiziologii rasteniy imeni K.A.Timiryazeva AN SSSR.
(Photosynthesis) (Cations)

Heat capacities of melts of sodium and potassium nitrates. N. K. Yankovskaya, G. N. Yan-Kovskaya, and V. Ya. Anisov (Inst. Gen. Inorg. Chem. Acad. Sci. U.S.S.R., Moscow). *Zhur. Priklad. Khim.* (J. Applied Chem.) 21, 18-25 (1948) (in Russian). -- Determinations of the heat capacities C_p in kcal./kg. degree, were made by the mixing method, with a water calorimeter below 300°, and an adiabatic calorimeter above that temp., between an upper temp. t_1 and about 30°, with an accuracy of 0.1-0.2%. C_p is the mean heat capacity of the liquid between t_1 and the crystal temp. Selected data of C_p : NaNO_3 (m. 282°), t_1 110.0, 200.5, 300.5, 350.5, C_p (G) 0.220, 0.413, 0.446 (0.482?), 0.616, 0.509 (0.383); NaNO_3 84.9 + NaNO_3 45.1% (m. 225°), t_1 110, 179.6, 213.8, 234.8, 271.0, 330.5, 402.5, C_p (G) 0.303, 0.451, 0.464, 0.541 (0.429?), 0.555, 0.509 (0.380), 0.458 (0.320); KNO_3 54.3 + NaNO_3 45.7% (m. 224°), t_1 110.0, 180.5, 210.2, 230.0, 270.5, 330.5, 401.5, C_p (G) 0.287, 0.394, 0.391, 0.420 (0.305), 0.418 (0.305), 0.391 (0.328), 0.351 (0.290); KNO_3 53 + NaNO_3 46 + NaNO_3 7% ("HTS No. 1"), (m. 112-8°), t_1 110.0, 130.5, 130.0, 153.2, 200.0, 350.0, 400.0, C_p (G) 0.448, 0.472, 0.500, 0.806 (0.312?), 0.533 (0.353), 0.431 (0.345), 0.418 (0.345); KNO_3 53.5 + NaNO_3 46.5 + NaNO_3 18.0% ("HTS No. 2"), (m. 170°), t_1 110.0, 160.0, 173.7, 230.8, 347.8, 502.0, C_p (G) 0.284, 0.436, 0.467 (0.443?), 0.430 (0.308), 0.401 (0.341), 0.394 (0.301). Only in the case of NaNO_3 and the given KNO_3 + NaNO_3 is there a sharp jump of C_p at the m.p. The 2 ternary systems show, at the m.p., sharp max. but

no jumps. For NaNO_3 + NaNO_3 , for which the exptl. points below the m.p. are somewhat scattered, a sharp max. appears much more probable than a jump. The exptl. C_p of solid KNO_3 + NaNO_3 are lower than the additive values calcd. from the data of Kelley (C.A. 28, 6601°), for NaNO_3 + NaNO_3 , the exptl. C_p are higher than those calcd. by additivity. For the 2 ternary alloys, C_p is almost independent of t_1 ; for the 2 binary alloys it decreases with increasing t_1 . The occasionally poor reproducibility of C_p of the solidified melts, the deviations reaching up to 2%, is ascribed to slowness of establishment of equil. in the solid state. For KNO_3 54.3 + NaNO_3 45.7%, the heat of fusion was calcd. approx. to 27 cal./g. ($\pm 10\%$).

N. Thon

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

21

...of ... in ...
 ... in which an ... of ...
 the leaf, if the monomer ... is absent the effect of K is
 either small or nonexistent. Apparently K acts merely as
 a means of removal, by condensation, of excess of monomers
 which hinder photosynthesis. Sprouts of 20-day barley
 in hydroponic culture provided the leaf specimens which
 were vacuum-infiltrated with KCl solns. and the photo-
 synthetic intensity was detd. by Warburg manometric
 method at 25° with illumination of 17,000 lumens over 3 1-
 hr. periods. NaCl of 0.1 M or less had no effect, CaCl₂
 lowered the photosynthesis rate, while KCl increased it.
 After these preliminary expts. the plants were grown in
 hydroponic cultures under the following conditions: 1. a
 normal K for 20 days, or 2. a normal K for 10 days, or
 normal K ration. The leaves for the expts. under these
 conditions contained 0.48 mg., 2.30 mg., and 0.06 mg. K
 per g. The 1st class showed photosynthesis drop by 20-
 25% compared to normal. Plants grown on normal K
 supply on infiltration with KCl showed increased photo-
 synthesis rate by 25-30% over controls (all results given
 graphically). Plants of the 2nd class also showed increased
 activity after KCl administration. Plants of the 1st cate-
 gory showed a reverse picture: KCl administration not only
 failed to increase the photosynthesis rate, but in individual
 cases actually lowered it. Detn. of water-sol. carbohy-
 drates in the 3 leaf types showed that the "starved"
 plants had 50% more reducing sugars than "normal"
 plants, while sucrose level decreased by 15%. The

"starved" plants had lowered monomer content (by 30%)
 and lowered total sol. carbohydrates (by 30%). Some
 seeds grown during the wet 1945 season (low photosynthe-
 sis due to cloudy conditions) showed little effect from KCl,
 for reasons discussed above; injection of 0.1 M glucose
 into such leaves dropped the photosynthesis rate by 35%;
 combined action of KCl and glucose gave only 5% drop.
 Growing plants in artificial shade showed reduced mono-
 saccharide level in the leaves (30%). Introduction of glu-
 cose and K into such plants gave a rapid synthesis of su-
 crose, while photosynthetic activity dropped.

G. M. Kozlovskii

VOSKRESENSKAYA, N. K.

22330 Voskresenskaya, N. K. Diagrammy udel'noy teployemkosti vodnykh troynnykh solyanykh sistem. izvestiya sektora fiz. - khim analiza (in-t obshchey i neorgan khimii im. kurnakova), T. XVII, 1949. S. 307-11-

Bibliogr: 12 Nazv

SO: LETOPIS' No. 30, 1949

VOSKRESENSKAYA, N.K.

Direction of the exchange reaction in salt systems. Izv. Sekt. fiz.
khim. anal. 18:160-171 ¹⁴⁹. (MIRA 11:4)

1. Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova
AN SSSR.

(Systems (Chemistry)) (Thermochemistry)

VOSKRESNENSKAYA, N.K.

Work of the physico-chemical analysis section at the N.S. Kurnakov
Institute of General and Inorganic Chemistry of the Academy of
Sciences of the USSR for the year 1946-1947. Izv. Sect. fiz. khim.
anal. 18:274-276 '49. (MIRA 11:4)

(Chemistry)

PA 193116

USSR/Chemistry - Analysis,
Physicochemical

May/Jun 51

"General Problems of Physicochemical Analysis,"
N. K. Vosskresenskaya, Moscow

"Uspekhi Khim" Vol XX, No 3, pp 365-371

Summarizes latest USSR developments in physicochem
analysis by brief abstracts from recent (1948 -
1950) periodical literature (principally from
"Is Sektora Fiziko-khim Analiza" (News of the Sec-
tor of Physicochemical Analysis)). Subjects cov-
ered include geometric representation of systems,
analysis of microdispersed solid systems, quant

193116

USSR/Chemistry - Analysis, May/Jun 51
Physicochemical (Contd)

phase analysis, pressure analysis, study of equil using
microcinematography, and study of structure of org
mol compds by fusibility diagrams and X-rays.

VOSSKRESENSKAYA, N. K.

193116

N. K. Voskreseskaya

Nov. 51 PA 194T44

USSR/Chemistry - Lithium and Fluorine Compounds Nov 51

"Heat of Formation of Double Salts $\text{Li}_2\text{SO}_4 \cdot \text{K}_2\text{SO}_4$, $\text{BaF}_2 \cdot \text{BaCl}_2$, and $\text{SrF}_2 \cdot \text{SrCl}_2$," N. K. Voskreseskaya, G. A. Bukhalova, Inst of Gen and Inorg Chem imeni N. S. Kurnakov, Acad Sci USSR

"Zhur Obshch Khim" Vol XXI, No 11, pp 1957-1961

Detd by expt heat of interaction of salts which form subject double salts. Calcd heat of formation of these double salts from elements.

194T44

VOSKRESENSKAYA, N. K.

USSR/Chemistry - Heat Effect

Dec 51

"The Heat Effects of the Double Decomposition of Salts Having Identical Valencies of Ions of the Same Sign," N. K. Voskresenskaya, Inst Gen and Inorg Chem, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXXI, No 4, pp 585-588

Gives eqs for calcg the heat effect of the 4 possible types of double decompn of salts having ions with valencies up to 2. Heat effect increases as the difference between radii of large and small ions of the same sign in the system increases. Reaction is exothermic when large cations combine with large anions and small cations with small anions.

202T21

~~TOP SECRET~~ ~~SECRET~~ VOSKRESENSKAYA N. K.

Category: USSR / Physical Chemistry
Thermodynamics. Thermochemistry. Equilibrium. Physico-chemical analysis. Phase transitions.

B-8

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29940

Author : Voskresenskaya N. K., Kashcheyev G. N.

Inst : Institute of General and Inorganic Chemistry, Academy of Sciences
USSR

Title : Solubility of Metal Oxides in Fused Salts

Orig Pub: Izv. Sektora fiz.-khim. analiza IONKh AN SSSR, 1956, 27, 255-267

Abstract: By the previously described method (RZhKhim, 1955, 36865) a study has been made of the solubility (m) of MgO (I) (99% by weight), CaO (99.16%) (II), ZnO (100.0%) (III), Cr₂O₃ (100.0%) (IV), and of a mixture of CuO and Cu₂O (98% CuO) (V) in fused MCl and M₂SO₄ (M -- Li, Na, K) at four temperatures within the temperature interval of 700-1200°. It was found that with increase in temperature m increases (in the case of I no change could be detected) and depends to a greater extent upon the nature of the oxides than on the nature of

Card : 1/2

-52-

VOSKRESENSKAYA, N. K.

Kurnakov, Nikolai Semenovich, 1866-1941.

Investigations by N. S. Kurnakov and his school of the chemistry of molten salts.
Usp. khim. 21 no. 9, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December 1958² Uncl.

VOSKRESENSKAYA, N.K.; PATSUKOVA, N.N.

Heats of formation of the double salts $KCl \cdot ZnSO_4$, $KBr \cdot ZnSO_4$, and $KI \cdot ZnSO_4$. Doklady Akad. Nauk S.S.S.R. 87, 219-21 '52. (MLR 5:11) (CA 47 no.13:6241 '53)

1. Institut obshchey i neorganicheskoy khimii imeni N.S. Kurnakova, Akademiya nauk S.S.S.R., Moscow.

"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001861020016-6

APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001861020016-6"

VoSK, RESENSH, A/N, N/K

3

0 2

VOBKRESENSKAYA, N. K.

Solubility of barium oxide in fused salts M. K. VOSKRESEN

sub. the soly. of BaO was detd. in fused LiCl, NaCl, KCl, Li_2SO_4 , and Na_2SO_4 at 4 temps. Temps. for LiCl expts. were in the range 700-1000°, for others in the range 600-1200°. The greatest soly. of BaO was in LiCl; in order of decreasing dissolving action were Li_2SO_4 , NaCl and Na_2SO_4 , KCl. The order of chlorides as solvents corresponded to Semenchenko's theory (C.A. 42, 3240) of real solns.

Burila-Mayevsk

[Handwritten signature]

Voskresenskaya N.K.

USSR/Chemical Technology./Chemical Products and their Application.
Glass. Ceramics. Building Material.

J-12

Abs Jour: Referat Zh.-Kh., No 8, 1957, 27624

Author : N.K. Voskresenskaya.

Inst :

Title : Microheterogeneity of Fused Salts.

Orig Pub: vSb: Stroyeniye Stekla. M.-L., AN SSSR, 1955, 315-316.

Abstract: It is pointed out that in order to understand the nature of glass as of an undercooled liquid, it is useful to take into consideration the conclusions and relations following from the theory of solutions. See RZhKhim, 1957, 1565 and 5163.

Card : 1/1

-25-

Voskresenskaya M/K

VOSKRESENSKAYA, N.K.; BANASHEK, Ye.I.

**Thermodynamic properties of the anhydrous double salt $\text{Li}_2\text{SO}_4 \cdot \text{K}_2\text{SO}_4$ at high temperatures. Izv.Sekt.fiz.-khim.anal. 26:111-116 '55.
(MIRA 8:9)**

1. Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova AN SSSR. (Thermochemistry) (Salts, Double)

VOSKRESENSKAYA, N.K.; PATSIKOVA, N.N.

Heats of formation of double salts $\text{MeI} \cdot \text{ZnSO}_4$. *Izv. Sek. fiz.-khim.*
anal. 26:117-122 '55. (MIRA 8:9)

1. Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova AN
SSSR. (Heat of formation) (Salts, Double)

VOSKRESENKAYA, N. K.

USSR/ Chemistry - Interchange reaction

Card 1/1 Pub. 22 - 23/51

Authors : Voskresenskaya, N. K.

Title : The trend of exothermal interchange reactions of the $2 AX + BY_2 = 2 AY + BX_2$ type

Periodical : Dok. AN SSSR 101/1, 89-91, Mar 1, 1955

Abstract : General terms were established which connect the tendencies of exothermal interchange reactions with the characteristics of ions at a different valence of the cations. The thermal effect of the reaction is considered as the algebraic sum of lattice energies of the four ion salts investigated. It was observed that exothermal reactions tend toward ion compounds with possibly closer radii. The thermal effect of the reaction was determined only by the radii of the cations; the dependence of the thermal effect of anion radii is explained. Three USSR references (1943 and 1951).

Institution : Acad. of Sc., USSR, The M. S. Kurnakov Institute of Gen. and Inorg. Chem.

Presented by : Academician G. G. Erazov, May 6, 1954

"APPROVED FOR RELEASE: 03/14/2001

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APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001861020016-6"

"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001861020016-6



APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001861020016-6"

VOSKRESENSKAYA, N.K.

USSR/Atomic and Molecular Physics - Statistical Physics. Thermo- D-3
dynamics.

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 8993

Author : Voskresenskaya, N.K., Sokolov, V.A., Banashek, Ye.I. Shmidt, N.Ye.

Title : Thermodynamic Properties of Lithium Fluoride

Orig Pub : Izv. Sektora fiz.-kim. analiza IONKh AN SSSR, 1956, 27,
233-238

Abstract : The specific heat C_p of crystalline LiF is determined in the temperature range from 317 to 658° K using a method previously described (Sokolov, V.A., Zh. tekhn. fiziki, 1948, 18, 813) (nine points; error $\pm 0.7\%$). The data obtained fit, within an average error of 0.25%, the relation C_p (cal/o. mol) = $10.32 + 3.90 \times 10^{-3} T - 1.36 \times 10^{-5} \times T^2$. A measurement was made of the enthalpy of LiF in the interval 673 -- 1410° K. The results are expressed by the equations: $H_T - H_{293.16}(\text{cal/mol}) = 10.00 T + 2.217 \times 10^{-3} T^2 + 122176 T - 3539$ (solid phase) and $H_T - H_{293.16} = 32 + 15.175 T$ (1128 -- 1410°K; liquid phase). $\Delta H_m = 6477$, $\Delta S_m = 5.78$ entropy units. The standard values are : $H_{298.16} = 1548$ cal/mol and $S_{298.16} = 8.53$ entropy units. The values of C_p , H , S and Z are calculated in the range 50 -- 1400°K and tabulated.

VOSKRESENSKAYA, N. K.

Category: USSR / Physical Chemistry

Thermodynamics. Thermochemistry. Equilibrium. Physico-chemical analysis. Phase transitions.

B-8

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29940

Author : Voskresenskaya N. K., Kashcheyev G. N.

Inst : Institute of General and Inorganic Chemistry, Academy of Sciences
USSR

Title : Solubility of Metal Oxides in Fused Salts

Orig Pub: Izv. Sektora fiz.-khim. analiza IONKh AN SSSR, 1956, 27, 255-267

Abstract: By the previously described method (RZhKhim, 1955, 36865) a study has been made of the solubility (m) of MgO (I) (99% by weight), CaO (99.16%) (II), ZnO (100.0%) (III), Cr_2O_3 (100.0%) (IV), and of a mixture of CuO and Cu_2O (98% CuO) (V) in fused MCl and M_2SO_4 (M -- Li, Na, K) at four temperatures within the temperature interval of 700-1200°. It was found that with increase in temperature m increases (in the case of I no change could be detected) and depends to a greater extent upon the nature of the oxides than on the nature of

Card : 1/2

-52-

Category: USSR / Physical Chemistry

Thermodynamics. Thermochemistry. Equilibrium. Physico-chemical analysis. Phase transitions.

B-8

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29940

the solvents. Magnitude of M (irrespective of temperature) increases in the series IV, I, III, V, II; dissolving power of the salts increases in the series K, Na, Li. With several exceptions in the case of I and III, m increases when the ratio of generalized moments of cation of the oxide and solvent approaches unity. A correlation has been noted between m and energy of oxide lattice. The difference is pointed out, as concerns solvent properties for oxides, between MCl and M_2SO_4 on one hand, and cryolite, on the other.

Card : 2/2

-53-

ANOSOV, Viktor Yakovlevich; VOSKRESENSKAYA, N.K., prof., doktor khim.
nauk, otv.red.; BELOVA, V.I., red.izd-va; IEGOROVA, N.F.,
tekh.n.red.

[Short introduction to physicochemical analysis; manual for
preliminary study] Kratkoe vvedenie v fiziko-khimicheskii
analiz; posobie dlia pervonachal'nogo osnakomleniia. Moskva,
Izd-vo Akad.nauk SSSR, 1959. 120 p. (MIRA 12:11)
(Chemistry, Physical and theoretical)
(Chemistry, Analytical)

VOSKRESENSKAYA, N.K.

Fusibility of anhydrous salt systems. Itogi nauki: Khim. nauki
4:141-151 '59. (MIRA 13:4)
(Salts) (Systems (Chemistry))

VOSKRESHNSKAYA, N.K.

Thermodynamic properties of fused salts. Itogi nauki: Khim.
nauki 4:152-159 '59. (MIRA 13:4)
(Salts)

VOSKRESENSKAYA, N.K.

Density, molar volumes, viscosity, electric conductivity,
surface tension, and other properties of homogeneous fused
salt systems. Itogi nauki: Khim.nauki 4:160-177 '59.
(MIRA 13:4)

(Salts) (Systems(Chemistry))

5(0)

SOV/78-4-9-1/44

AUTHORS:

Voskresenskaya, N. K., Teytel'baum, B. Ya.

TITLE:

Nikolay Aleksandrovich Trifonov (Obituary)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol. 4, Nr 9,
pp 1945-1951 (USSR)

ABSTRACT:

On December 9, 1958, in Kazan', Professor N. A. Trifonov died. He was born in Peterburg on February 23, 1891, completed his education at the secondary school in Novgorod in 1909, and studied at the Peterburgskiy politekhnicheskii institut (Peterburg Polytechnic Institute) under the guidance of N. S. Kurnakov, V. A. Kist'yakovskiy, P. P. Fedot'yev, A. F. Ioffe and A. A. Baykov). His diploma work treated the subject of heterogeneous equilibria. From 1917 to 1919 he was Head of the Laboratory for Chemical Preparations of the Petrogradskiy oblastnoy komitet po snabzheniyu Armii (Petrograd oblast' Committee for the Supply of the Army). Since 1919 Trifonov worked at Saratov University, first at the Chair of Inorganic and Physical Chemistry, later as Head Assistant at the Chair of Physics under Professor K. A. Leont'yev, a pupil of P. P. Lebedev. Trifonov gathered a group of students

Card 1/4

SOV/78-4-9-1/44

Nikolay Aleksandrovich Trifonov (Obituary)

(N. K. Voskresenskaya, S. I. Cherbov, T. A. Samartsev, R. V. Mertslin, K. I. Samarina, P. D. Dankov), who were working at various educational establishments or laboratories in Saratov, and who devoted their free time to work under Trifonov. Together with the physicist P. V. Golubkov and the chemist V. Ya. Anosov the analysis of liquid systems was developed. Since 1928 Trifonov was Head of the Chair of Inorganic and Physical Chemistry at Perm' University. From 1933 to 1939 Trifonov worked at the Institutes for Highway Construction of the GUSHOSSDOR of the NKVD (Glavnoye upravleniye shosseynykh dorog - Main Administration of Highways), first in Moscow, and since 1937 in Saratov. Since 1939 he was Head of the Chair of Physical and Colloid Chemistry of Rostov University, and in 1940 defended his doctoral thesis. The subject of this thesis was the physico-chemical analysis of binary liquid systems on the basis of the shape of the isothermal lines of the surface tension. It had been written at the Institut obshchey i neorganicheskoy khimii Akademii nauk SSSR (Institute of General and Inorganic Chemistry of the Academy of Sciences, USSR). Since 1944 Trifonov was

Card 2/4

SOV/78-4-9-1/44

Nikolay Aleksandrovich Trifonov (Obituary)

Head of the Chair of Physical and Colloid Chemistry at Kazan' University and the Department of Physical Chemistry of the Kazan' Branch of the AS USSR. Together with coworkers he made a detailed investigation of the systems nitric acid - acetic acid (with S. P. Miskidzhyan), phosphorus trichloride - benzaldehyde (with F. F. Fayzullin), and dioxane - water (with M. Z. Tsypin). Together with R. V. Mertslin he investigated the temperature dependence of the surface tension of solutions, and illustrated the equations given by K. M. Stakhorskiy for normal binary systems. With R. V. Mertslin, A. T. Khalezova, G. K. Aleksandrov et al he studied the chemical influence of the isothermal lines of the surface tension. Trifonov's dissertation formed the basis for the research work of his school: I. F. Taykov, K. N. Kovalenko, O. A. Osipov, V. P. Dedushenko, B. Ya. Teytel'baum et al. In connection with the studies of P. A. Rebinder on the adsorptive lowering of hardness Trifonov, together with Ye. Ye. Gorbovskiy, N. P. Chernyak, and other coworkers, discovered the effect of increasing hardness by physico-chemi-

Card 3/4

SOV/78-4-9-1/44

Nikolay Aleksandrovich Trifonov (Obituary)

cal methods. Trifonov devoted his time to the extension of his main field of investigation, the analysis of fluid systems, by inclusion of the thermodynamical properties. This was partly realized by his pupils N. L. Yaryy-Agayev (heats of mixing), and M. P. Dianov (boiling points) at a time, when Trifonov was already seriously ill. Trifonov wrote more than 100 papers. 50 of his pupils and coworkers attained scientific degrees. Finally, a list of the scientific publications and manuscripts is given. There are 1 figure and 92 Soviet references.

Card 4/4

AUTHORS: Voskresenskaya, N. K., Berul', S. I. S/078/60/005/03/026/048
B004/B015

TITLE: Thermal Stability of the Easily Meltable Mixture of Nitrites and Nitrates of Sodium and Potassium

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol 5, Nr 3, pp 654-659 (USSR)

ABSTRACT: The authors investigated (Ref 1) the behavior of the nitrite-nitrate mixture (40 weight% of NaNO_2 , 53 weight% of KNO_3 , 7 weight% of NaNO_3), which is used as a coolant, after 720 hours of heating in various metallic vessels (Ag, Fe or various types of steel) and found that all metals react with the nitrate ions. The present paper reports on seven further experiments, the first of which was carried out in the presence of water vapor, the others, however, under exclusion of water vapor. Vessels made of Armco iron and steel of the types 12MPKh and Kh18N25S2 were investigated. The authors refer to similar experiments carried out by M. I. Ravich and Ye. V. Frolova (Ref 2), as well as to the publications that appeared after that mentioned in reference 1. Table 1 shows the analysis of the nitrite-nitrate melt. Tables 2-4 give the experimental results.

Card 1/3

Thermal Stability of the Easily Meltable Mixture
of Nitrites and Nitrates of Sodium and Potassium

S/078/60/005/03/026/048
B004/B015

Table 5 shows the change of the NO_2^- and NO_3^- content, and table 6 the same found in earlier experiments in the presence of water vapor. In all experiments the melt was found to show an increasing nitrate- and a decreasing nitrite content. The experiments carried out in vessels with walls of poor oxidizing properties (oxidizing steel vessel of the type 12MPKh, vessels made of steel of the type Kh18N25S2 with different surface condition) indicated a partial oxidation due to the atmospheric oxygen entering the apparatus. This additional oxidation has, however, no essential influence upon the increase in NO_3^- and the decrease in NO_2^- . A comparison of the results obtained in the course of this investigation with those of reference 1 shows the considerable effect of water vapor. Only in the presence of water vapor nitrates are reduced by metals. The experiment made with the Armco iron vessel with oxidized surface in the presence of water vapor resulted in a considerably smaller decomposition of the nitrate-nitrite mixture than in vessels with clean metallic surface, which again shows the role of metals. The authors refer to Ye. I. Gurovich and G. P. Shtokman (Ref 7). L. A. Domogatskikh took part in the experiments. There are 6 tables and 7 references, 3 of which are Soviet.

Card 2/3

Thermal Stability of the Easily Meltable Mixture
of Nitrites and Nitrates of Sodium and Potassium

S/078/60/005/03/026/048

B004/B015

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova
Akademii nauk SSSR
(Institute of General and Inorganic Chemistry imeni N. S. Kurnakov
of the Academy of Sciences, USSR)

SUBMITTED: November 12, 1958

Card 3/3

S/078/60/005/009/013/017
B015/B064

AUTHORS: Voskresenskaya, N. K., Budova, G. P.

TITLE: Interaction of Nb_2O_5 With the Chlorides of the Alkaline and Alkaline-earth Metals

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 9, pp. 2051-2055

TEXT: The interaction of Nb_2O_5 with the chlorides of Li , Na , K , Cs , Ca , and Ba was investigated by the method of isothermal dissolution (Ref. 2) in the nitrogen current at an experimental time of between one and five hours. The experiments were conducted in the ТГ-3 (TG-3) furnace, with the temperature being controlled with an electronic potentiometer of the type ЭПД-17 (EPD-17). Niobium was colorimetrically determined by a method developed by N. P. Alimarin and R. L. Podval'naya with a ФЭК-М (FEK-M) photocalorimeter. Nb_2O_5 was found (Table 1) to go over into the melt at 1000° - 1200° C, i.e., most intensively in $CaCl_2$, less in $BaCl_2$ and KCl , and

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Interaction of Nb_2O_5 With the Chlorides of the
Alkaline and Alkaline-earth Metals

S/078/60/005/009/013/017
B015/B064

least in NaCl. Nb_2O_5 dissolves at 700° - $900^{\circ}C$ only in the $CaCl_2$ melt. X-ray analyses of the solid phases obtained after reaction (after the removal of the salts with water) showed that no niobium pentoxide is present. The reaction with NaCl led to the formation of $NaNbO_3$, or Na_3NbO_4 as was proved by X-ray data (Table 2) in accordance with the data given by A. V. Lapitskiy and V. I. Spitsyn. $NaNbO_3$ and Na_3NbO_4 were found to be little soluble in NaCl. In conclusion, V. G. Kuznetsov is thanked for his assistance. There are 2 tables and 11 references: 7 Soviet, 3 US, and 1 French. ✓

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S.
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SUBMITTED: June 10, 1959

Card 2/2

VOSKRESENSKAYA, N.K.

Nikolai Semenovich Kurnakov; on the 100th anniversary of his birth.
Zhur. fiz. khim. 34 no.12:2625-2629 D '60. (MIRA 14:1),
(Kurnakov, Nikolai Semenovich, 1860-1941)

VOSKRESENSKAYA, N.K.; YEVSEYEVA, N.N.; BERUL', S.I.; VERESHCHETINA, I.P.;
TRAVIN, N.V., red. izd-va; BLEYKH, E.Yu., tekhn. red.

[Reference book on the fusibility of systems of anhydrous inorganic salts] Spravochnik po plavkosti sistem iz bezvodnykh neorganicheskikh solei. Sost. N.K.Voskresenskaia i dr. Moskva. Vol.2. [Ternary, ternary reciprocal, and multicomponent systems] Sistemy troinye, troinye vzaimnye i bolee slozhnye. 1961. 585 p. (MIRA 14:7)

1. Akaderiya nauk SSSR. Institut obshchey i neorganicheskoy khimii.
(Salts) (Systems (Chemistry)) (Melting points)

VOSKRESENSKAYA, N.K., doktor khim. nauk; YEVSEYEVA, N.N., kand. khim. nauk;
BERUL', S.I.; VERESHCHETINA, I.P.; TRAVIN, N.V., red. izd-va; BLEYKH,
E.Yu., tekhn. red.

[Manual on the fusibility of the systems consisting of anhydrous
inorganic salts] Spravochnik po plavkosti sistem iz bezvodnykh
neorganicheskikh solei. Sost. N.K.Voskresenskaia i dr. Moskva,
Vol.1. [Binary systems] Dvoinye sistemy. 1961. 845 p. (MIRA 14:6)

1. Akademiya nauk SSSR. Institut obshchey i neorganicheskoy khimii.
2. Laboratoriya khimii i termodinamiki rasplavlennykh sred Instituta
obshchey i neorganicheskoy khimii im. N.S.Kurnakov AN SSSR (for
for all except Travin, Bleykh)
(Salts) (Systems (Chemistry))

S/078/62/007/004/009/016
B110/B101

AUTHORS: Voskresenskaya, N. K., Berul', S. I.

TITLE: Conversions of CeO_2 , Nd_2O_3 , Sm_2O_3 and their interaction with molten lithium- and potassium chlorides and sodium carbonate and sulfate

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 4, 1962, 850-855

TEXT: The interactions of three basic oxides: CeO_2 , Nd_2O_3 and Sm_2O_3 with melts of chlorides, carbonates and sulfates were investigated. The heating curves of CeO_2 , Nd_2O_3 and Sm_2O_3 and the X-ray patterns were recorded. The heating curve of untreated CeO_2 shows no deflection. The thermogram of $\text{Nd}_2\text{O}_3 \cdot 3\text{H}_2\text{O}$ showed heat effects at (1) $320-330^\circ\text{C}$, loss of 1.7 molecules $\text{H}_2\text{O} \rightarrow \text{NdO} \cdot \text{OH}$, ($\text{Nd}_2\text{O}_3 \cdot \text{H}_2\text{O}$), (2) 488°C , loss of 0.5 molecules $\text{H}_2\text{O} \rightarrow \text{Nd}_2\text{O}_3 \cdot 0.5\text{H}_2\text{O}$, (3) $510-545^\circ\text{C}$, loss of 0.8 molecules $\text{H}_2\text{O} \rightarrow \sim \text{Nd}_2\text{O}_3$. In the thermogram of the sample annealed at 400°C to constancy of weight, Card 1/4.

S/078/62/007/004/009/016
B110/B101

Conversions of CeO_2 , Nd_2O_3 , ...

1 is absent, but a new effect appears at $700-765^\circ\text{C}$. 2 and 3 are shifted toward higher temperatures. An effect existed at 900°C for the sample dehydrated at 700°C , quickly heated to 1000°C and cooled again to room temperature. The X-ray patterns of samples cooled in air from (a) 700°C and (b) 1000°C , showed many lines corresponding to $\text{B-Nd}_2\text{O}_3$ (M. W. Shafer, R. Roy, see below) for a, and such corresponding to $\text{A-Nd}_2\text{O}_3$ for b. Lines corresponding to $\text{NdO}\cdot\text{OH}$ also appeared in a and b. In Sm_2O_3 there appeared: (1) an exothermal effect at $215-310^\circ\text{C}$, which corresponds to the transition from the amorphous into the crystalline state, (2) an endothermal one at $400-450^\circ\text{C}$ and (3) an endothermal one at 615°C . In samples cooled from $500-600^\circ\text{C}$ and 1000°C , $\text{B-Sm}_2\text{O}_3$ and $\text{SmO}\cdot\text{OH}$ were found. The rare earth oxides were isothermally saturated with salt melts at $800-1100^\circ\text{C}$ in an electric furnace. The amount of cerium in the liquid phase was determined colorimetrically according to Westwood and Mayer (see below). When heating CeO_2 for 4 hrs at 900 and 1000°C with KCl , only Ce traces enter the liquid phase; at 1100°C 0.0010% by weight Ce (0.0012% by weight CeO_2). Presumably the reaction proceeds as follows: $2 \text{CeO}_2 = \text{Ce}_2\text{O}_3 + \text{O}$,

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S/078/62/007/004/009/016
B110/B101Conversions of CeO_2 , Nd_2O_3 , ...

$\text{Ce}_2\text{O}_3 + 6 \text{KCl} = 2 \text{CeCl}_3 + 3 \text{K}_2\text{O}$. Isothermal dissolving of CeO_2 in LiCl for 3 hrs at 1000°C resulted in 0.00030% by weight Ce (0.00036% by weight CeO_2) in the liquid phase. In KCl - and NaCl melts about 0.3 mole Nd_2O_3 /100 mole and in LiCl melt ~ 0.2 mole Nd_2O_3 /100 mole salt entered the liquid phase. Since Nd_2O_3 dissociates into five ions in dilute solutions, the values for KCl and NaCl are < 0.06 mole Nd_2O_3 , for LiCl < 0.04 mole Nd_2O_3 , which corresponds to $< 0.3\%$ by weight Nd_2O_3 . Sm_2O_3 did not enter the liquid phase at all. A crushed mixture of Na_2CO_3 and CeO_2 , corresponding to the composition Na_2Ce_3 was heated for 4, 24, 72 and 120 hrs at 800, 900, 1000, and 1100°C . Only in samples heated for 72 and 120 hrs at 1100°C , three very weak new lines appeared. When heating CeO_2 with Na_2SO_4 for 5 hrs at 1000 and 1100° , 0.198-0.200% Ce were determined colorimetrically and 0.036-0.38% by weight oxygen ions by titration. The bottom phases showed three to four very weak new lines. When heating for 5 hrs at 1100°C , no interaction was found between Na_2SO_4 and Sm_2O_3 . V. G.

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Conversions of CeO_2 , Nd_2O_3 , ...

S/078/62/007/004/009/016
B110/B101

Kuznetaov is thanked for his advice. There are 4 figures and 1 table.
The most important English-language references are: M. W. Shafer, R. Roy,
J. Amer. Ceram. Soc., 42, 503 (1959). W. Westwood, A. Mayer, Analyst.,
73, 275 (1948).

ASSOCIATION: Institut obshchey i neorganicheskoy khimii Akademii nauk
SSSR (Institute of General and Inorganic Chemistry of the
Academy of Sciences USSR) ✓

SUBMITTED: May 9, 1961

Card 4/4

ACCESSION NR: AT4014066

S/3072/63/000/000/0115/0120

AUTHOR: Gurovich, Ya. I.; Veyler, S. Ya.; Likhtman, V. I.; Voskresenskaya, N. K.

TITLE: Investigation of the lubricating properties of salt mixtures during the pressure heat treatment of metals

SOURCE: Fiz.-khim. zakonornosti deystviya smazok pri obrabotke metallov davleniyem. Moscow, Izd-vo AN SSSR, 1963, 115-120

TOPIC TAGS: salt mixture, lubricant, lubricating property, heat treatment, metal, metal alloy, salt eutectic, corrosion, wire drawing

ABSTRACT: Since the usual lubricants such as graphite, liquid glass, or mineral oils prove unsatisfactory during hot pressure working of stainless steels, some new lubricants such as salt mixtures have been investigated. The following salt mixtures have been tested: (1) Nitrate-nitrite salts, applied during punching of aluminum alloys. These have proved dangerous because of their explosive properties; (2) Salts such as $MgCl_2$, KCl , $NaCl$, $ZnCl_2$ and K_2SO_4 ; (3) Melts containing $ZnCl_2$ and ZnS ; (4) Melts such as $PbCl_2$; (5) Mixtures containing salts of Sn ; (6) Melts such as Cd -salts, Li -salts, and salt mixtures such as phosphates. Two groups of eutectic mixtures may be distinguished: (a) Salt mixtures forming

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ACCESSION NR: AT4014066

high viscosity liquids at high temperatures that shield the surface from friction and (b) Salt eutectics that, in contact with the hot metal, decompose and form an easily melted metal. The lubrication properties of all mixtures tested were evaluated on the basis of their corrosive action when applied as lubricants for pressure punching of Al, Fe, and Mg alloys. The corrosion tests were carried out by full immersion of the tested metal and by the drop method. It was proven that the corrosive activity of the tested lubricants increased proportionally to their hygroscopic properties. In some special mixtures of salts, their corrosive action decreased; for example, NaCl and KCl or Li-salts, which appear highly corrosive by themselves, are much less corrosive or even not corrosive when applied as a mixture. The lubrication properties of the fused salts were evaluated by various methods under semitechnological and laboratory conditions. The salt eutectics reduced the pressure necessary for extrusion or punching of low C-steel and Al by 50% as compared with no lubrication. Compared with graphite lubrication, the pressure was the same. The authors also studied the effect of salt lubrication during the process of wire drawing hot aluminum D-16 and steel. It was found that salt mixtures had the best lubrication properties in narrow temperature intervals close to their softening temperature. A plot of wire drawing pressure

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ACCESSION NR: AT4014066

versus temperature with eutectic $\text{ZnCl}_2\text{-KCl}$ applied as a lubricant showed a minimum close to 200C whereas the eutectic temperature appeared lowest near 230C. Orig. art. has: 1 figure and 3 tables.

ASSOCIATION: None

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ENCL: 00

SUB CODE: MM

NO REF SOV: 006

OTHER: 006

Card 3/3

BERUL', S.I.; VOSKRESENSKAYA, N.K.

Reaction of sodium metaphosphate with cerium, neodymium, and
samarium oxides. Zhur. neorg. khim. 10 no.5:1110-1120 My '65.
(MIRA 18:6)

1. Institut obshchey i neorganicheskoy khimii imeni Kurnakova
AN SSSR.

"APPROVED FOR RELEASE: 03/14/2001

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APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001861020016-6"

KRIVOVYAZOV, Ye.L.; SOKOLOVA, I.D.; VOSKRESENSKAYA, N.K.

Surface tension of nitrite-nitrate and nitrate salt mixtures.
Zhur. prikl. khim. 36 no.11:2542-2543 N '63.

(MIRA 17:1)

TIKHOMIROV, V.V.; VOSKRESENSKAYA, N.A.

Commemorative dates in January-February, 1963. Review no. 37.
Sov. geol. 6 no.1:145-152 Ja '63. (MIRA 16:6)

1. Geologicheskii institut AN SSSR.
(Anniversaries)

BERUL', S.I.; VOSKRESENSKAYA, N.K.

Interaction of CeO_2 , Nd_2O_3 , and Sm_2O_3 with molten fluorides.
Zhur. neorg. khim. 8 no.6:1431-1436 Je '63. (MIRA 16:6)

1. Institut obshchey i neorganicheskoy khimii imeni Kurnakova,
AN SSSR,
(Rare earths) (Fluorides)

VOSKRESENSKAYA, N.K.

Thermodynamic basis for Kablukov's rule. Zhur.neorg.khim. 8
no.5:1190-1195 My '63. (MIRA 16:5)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.Kurnakova
AN SSSR.

(Systems (Chemistry)) (Salts) (Thermodynamics)

L 10650-63

EFF(c)/EWP(q)/EWT(m)/BDS--AFFTC/ASD--Pr-4--WH/JW/JD

ACCESSION NR: AP3001221

S/0078/63/008/006/1431/1436

AUTHOR: Berul', S. I.; Voskresenskaya, N. K.

64
62

TITLE: Reaction of CeO sub 2, Nd sub 2 0 sub 3 and Sm sub 2 0 sub 3 with fused fluorides
27 27

SOURCE: Zhurnal neorganicheskoy khimii, v. 8, no. 6, 1963, 1431-1436

TOPIC TAGS: fused fluorides, CeO sub 2, Nd sub 2 0 sub 3, Sm sub 2 0 sub 3, cryolite systems, liquidus

ABSTRACT: It was found through the isometric saturation method that 0.1 weight % Ce or 0.7-0.8 weight % Sm (based on weight of melt) was converted in a molten eutectic mixture of NaF-KF (40 and 60 mol %; 716 degrees) in 4 hours at 1000-1100 degrees. The liquidus of cryolite (Na sub 3 AlF sub 4)- CeO sub 2 and of cryolite - Sm sub 2 0 sub 3 systems, obtained visually, was at a temperature higher than was necessary from the heat curves. The eutectics (from diagrams based on heat curves) were 880 degrees, 5.5 mol % CeO sub 2; 963 degrees, 1.2 mol % Sm sub 2 0 sub 3. Liquidus of the cryolite - Nd sub 2 0 sub 3 system, obtained visually, showed a eutectic at 904 degrees for 12 mol % Nd sub 2 0 sub 3. 22 mol % of CeO sub 2 dissolved in a eutectic mixture of cryolite - NaF, lowering fusion temperature to 798 degrees. Roentgenograms of the melts showed only the starting materials; only
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